

B Scene



Vol 2, No. 2 • Bioscience Division Newsletter • February 28, 2000

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**Tomorrow is
Leap Day
February 29**



Tom Meyer fields questions from B Division staff in HRL-1 auditorium

ALDSSR Visits B Division

Dr. Tom Meyer, Associate Lab Director for Strategic and Supporting Research, visited Bioscience Division on February 15th and spent the morning visiting with various scientists and seeing first hand laboratory facilities in the Health Research Laboratory and at TA-35. His tour itinerary included an open forum at each site where scientists were invited to ask questions and engage Meyer in a dialogue.

Meyer opened his remarks at both forums by saying that he is particularly concerned about maintaining the quality of science at Los Alamos. "This Laboratory is one of the premier research laboratories in the world, if not the premier Laboratory. How do we maintain that excellence and define our research niche? How do we attract funding for bioscience...to this Division? We must add value to our basic research by finding applications in health care, reducing the spread of disease, combating bioterrorism.

"How do we bring major funded programs into the Laboratory? We need to encourage a partnership between NIH and DOE...show NIH the value of our facilities. People in Congress are interested but they don't know what to do. We need to identify 2-3 prime areas where we are unique and strong, and develop multidisciplinary collaborative efforts that play to those strengths. How do collaborations get started? They always start with Principal Investigators talking to other PI's. We need to think about ways for people to come together. It takes time...we need to provide an environment in which people can get together long enough to get interested in working together."

When asked if he was going to work on reducing the cost of doing business at the Laboratory to make scientists more competitive in their search for external funding, Meyer responded that it is one of the "20 things on my list." He added, "I always keep 20 things that I am working on...when one gets solved, then it comes off and I can add another. Finding ways to reduce our costs to external sponsors is definitely one of the 20." He agreed with a comment that the bureaucracy at the Laboratory needs to be streamlined and simplified. He said, "We will work on it."

Asked about technology transfer, Meyer said that the Laboratory has an inadequate marketing program for its science. "At the University of North Carolina, we put together a staff of 5 Ph.D.'s to work as marketing experts for the University's science...that was their whole job and they were excellent. We don't have anything approaching that at this Laboratory and we need to fix that." He pointed out that Sen. Bingaman has introduced legislation to encourage technology transfer by simplifying the language for Cooperative Research and Development Agreements (CRADAs) to facilitate collaboration between the DOE labs and industry. He said that the DOE labs are "fighting to get to the outside world" and be competitive. This is in contrast to his experience in a University environment. "To help us with this problem, we need to focus on other opportunities besides CRADAs to work with industry...bring in consultants, learn from others' experience." He added that the Laboratory should focus on its Intellectual Property (IP) and expect the marketplace to pay for the patenting process. "A company will pay for the patenting process if it's a technology they really want; what we are missing is the marketing component....finding those companies."

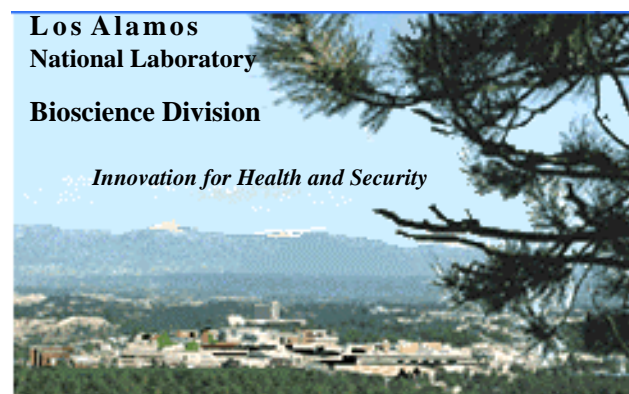
Regarding questions on restoring LDRD and travel to previous levels, he described efforts at the Congressional level and was confident that some relief would be achieved in both areas in the next fiscal year.

Meyer's tour at HRL started with Jim Freyer and Karen LaRue showing him how they are studying the microenvironment of a tumor cell using multicellular spheroids as models. Min Park described the Division's efforts in the development of an Integrated Structural Biology resource and the structural genomics initiative. Dick Keller then introduced the multi-disciplinary team working on single molecule detection. James Jett directs the National Flow Cytometry resource; Patrick Ambrose leads single molecule imaging efforts; and Peter Goodwin and Hong Cai are developing various bioassays including DNA. Steven Emory, Angela Arias and Kevin Grace showed Meyer various other methodologies for small molecule detection. At his next stop, John Nolan showed how his team is developing high throughput, homogeneous techniques for detecting genetic variation at the single nucleotide level for applications in human health and bioterrorism. Development of improved tests for the detection of beryllium sensitivity and disease was described by Babs Marrone. Andrew Bradbury reviewed his work in the development of libraries of molecules to recognize proteins in the human genome. The next stop was in Cheryl Kuske's laboratory, where she described new methods for uniquely identifying pathogens using DNA signatures and genetic analysis. Michael Altherr and Tom Brettin talked about DNA microarray technology and its utility in measuring the activity of many genes (simultaneously) in a cell. At TA-35, Meyer was treated to a tour of the Stable Isotope Resource (SIR) and the optical biopsy laboratories. Cliff Unkefer and Pete Silks described the research and service components of the

SIR. New methods for synthesizing compounds are developed and provided to the research community and some stable isotope labeled compounds are distributed to investigators. Pat Unkefer described her research on enhancing protein content and biomass of plants. Judy Maurant talked about understanding the basic mechanisms of how light interacts with tissue interaction and its use as a cancer diagnostic. The following afternoon, Meyer paid a visit to the Integrated Spectroscopy Laboratory at TA-46 and talked with Brian MacDonald, Steven Gallagher and William Heller about the x-ray scattering laboratory. He was very interested in how small angle x-ray scattering is used to understand protein-protein interactions. He also explored with Robert Donohoe and Brian Dyer how renovations to Building 208 could provide expanded capabilities for biology and materials chemistry.

➤ *Contributed by Sandra Zink*

From Jill's Desk



Washington Visits

I was two days in Washington last week visiting different agencies to tell them of our Division and find out what might be coming down the pike toward us in the way of opportunities. Overall I have to say at each stop there was considerable excitement about our multidisciplinary Division!

My first stop was with the Janet Dorigan and John Phillips, who talked to me about needs in the intelligence community relating to our interests in contributing to Bio-threat Reduction. I have to honestly report that I got a strong and consistent message from this stop and others that Livermore's marketing strategy and high level management involvement in that program area was extremely effective and in comparison to our approaches was in essence costing us in terms of how effectively we could contribute our science and technology in this area of many opportunities. Clearly, we have to address this issue. I will be talking with folk about specific things that would help us, and hope to turn this situation around so that we can equalize the playing field better for the future and be seen as more equal partners with our sister laboratory.

My next stop was at DOE/OBER to visit Ari Patrinos and Roland Hirsch. Ari was very interested in

finding out how he could help us be in a more competitive position to capitalize on new NIH \$'s in Washington, and so Scott is keeping him apprized of the NIH interest in partnering with the defense labs in the area of computational bioengineering. Ari also talked about the BERAC subcommittee that is looking into the future directions for the bioscience programs at the labs. That subcommittee is headed by Ray Gesteland (Utah) and will have its second meeting in Santa Fe this week during the Genome Contractors meeting. We have been providing input to that committee and, along with my equivalents at Livermore and Berkley, I will be meeting with Marvin Frazier and Ray Gesteland one evening next week. This committees deliberations will be of great consequence to us all. Roland Hirsch told me that one area that he expected new \$'s in next year was biomedical engineering!

I visited Page Stoutland, DOE/Chem-Bio Nonproliferation and gained some insights into that program needs for the future. In particular they are interested in increasing their capacity for sequencing, and so I have been talking with our JGI folk about how that might be done. Larry Deaven is very interested in seeing how we might capitalize on this interest.

I also visited Tom Meyer (a different Tom to our ALDSSR) and the Departement of Defense DARPA program office, which focuses on advanced research projects, including the area of bio-defense. Tom's advice was that there really were many unexplored opportunities at DARPA, and that having someone from Los Alamos go there on change of station would be an excellent long term investment for us. They are currently looking for individuals with bio backgrounds. The current bio/info/micro initiative they have a call out for (deadline for preproposals just past) has \$100m associated with it! He spoke enthusiastically of Goutam Gupta's contributions at DARPA - good work Goutam!

I finished my tour with a visit to Health and Human Services (under which sits NIH, CDC, and FDA). I visited the office interested in bioterrorism - they are investing ~\$260M in this area. They were very interested in the Lab's modeling and simulation capabilities as well as our detection strategies and I will be following up with folk on that in the next few weeks.

Overall it was a busy and worthwhile two days. Clearly many opportunities, clearly much work to do!

➤ Jill

Communications Team Report

The Communications Team continues to make progress on several fronts: in addition to the B Scene, we are initiating efforts in science outreach; a mini lecture series at the University of New Mexico Los Alamos campus; news updates; and upgrading Bradbury science exhibits. With this issue, we announce our first draft of the new Bioscience Division web page at

http://telomere.lanl.gov/b_internal/new_bdiv/.

Annette Archuletta, B Division Office, has been working hard to bring up the web-site with our initial design. Thanks also to Electra Sutton who developed the graphics files. Please check it out and send comments to

Annette at ava@lanl.gov or myself (zink@lanl.gov). At this point, it's a working document and very much subject to change. We welcome your input!

➤ Contributed by Sandra Zink

Bravo

Crissman Nominated for Cytometry Post



Harry Crissman, Staff member in Bioscience Division, BN-2, has been nominated as a candidate for President-Elect, election year 2000, by the Nominating Committee of ISAC - International Society For Analytical Cytology. Ballots have been mailed to approximately 2000 international members of the society and the elected will be announced at the ISAC XX International Congress, Montpellier, France, May 20-25, 2000. Harry is Principal Investigator for the NIH-funded program "Flow Cytometric Analysis of Multiple DNA Fluorochromes" and during the course of his career, has authored more than 120 scientific publications including 32 book chapters. He currently serves as Associate Editor for five scientific journals, including Cytometry and is Managing Editor for USA, Eur. J. Histochem. Harry received a BS degree from Lock Haven University and MS and Ph.D. degrees from Pennsylvania State University. During his career in science, Harry has been a recipient of many awards, including a Fulbright Scholarship, and is listed in "Who's Who in the West" and "American Men and Women of Science".

➤ Contributed by Joe Valdez

Breaking News

New Tests Will Aid Beryllium Workers

A news release last week highlighted the results of a three year study by B Division scientists to develop improved methods for detecting individual sensitivity to beryllium. The story by Jim Danneskiold of Public Affairs appeared in full in the February 23 Lab Newsbulletin (<http://www.lanl.gov>) and was accompanied by a quote from Secretary of Energy Bill Richardson. The team, led by Babs Marrone has devised

a new, more accurate blood test to identify workers who are sensitized to beryllium. The researchers also have pinpointed genetic markers that indicate increased risk for a small number of workers who are more likely to develop CBD. Los Alamos maintains the DOE's capabilities for research and development in beryllium, a unique metal used in nuclear weapons and, in the commercial sector, for telescope mirrors, golf clubs and a host of other applications. Results of the Immuno-LPT studies were published last week in the journal *Toxicology*. Authors of the paper are Georgia Farris, Yulin Shou, Robert Habbersett, Hugh Smith and Marrone, of LANL; and Lee Newman, Elizabeth Barker and Lisa Maier of the National Jewish Medical and Research Center in Denver; and Edward Frome of Oak Ridge National Laboratory. Authors of the research paper on the genetic markers, which was published last year in *The Journal of Immunology*, include Zaolin Wang, Scott White, Michelle Petrovic, Owatha Tatum and Marrone of LANL; and Newman and Maier from the National Jewish Medical and Research Center.



➤ *Contributed by Babs Marrone*

B Heard

Dear Editor,

I want to let you know that I appreciate the Bscene - it is useful and interesting. However, I suggest that we eliminate or greatly reduce the hard copy version. When I get the Bscene electronically, I read it, take note of the interesting stuff, and then move on. When the paper version shows up in my mailbox I send it directly to the recycle.

➤ *Robert Donohoe*

Editor: Thanks, Robert. We will distribute fewer hard copies this issue and see how it goes.

Recent Meeting on Post-docs

On Feb. 17 Basil Swanson and Jim Brainard organized a well attended postdoc forum to discuss B Division hiring practices. As postdocs, we are happy to see the staff hiring issue brought back on the table by Division managers. From the call of this meeting, it is obvious that efforts are being extended by the division to insure hiring practices be fair and open and be responsive to both the needs of the Division and the individuals. We

appreciate being given such a precious opportunity to express our opinions, discuss our concerns and to plan our future with the help of Division leadership. A handout covering the B Division staffing practices, high-level & job-specific criteria for TSM hires, expectations of postdocs and Division responsibilities to postdocs was distributed among attendees. Though some issues need to be clarified, most of us have a much clearer understanding about Division's expectations and the criteria concerning hiring.

One important issue is that our senior postdocs are not able to apply independently for grants. This essentially locks them out of many academic positions at all of the major universities because the reality is that you need to bring in your own grants if you want to get an academic position. In most universities, postdocs in their 3rd or 4th year are promoted to positions like research scientist, research investigator or another similar position so they will be able to apply independently for their own grants. These grants give postdocs at universities an unmatched competitive advantage for those academic positions. Some postdocs think the Division should encourage postdocs to write NIH Individual Research Service Award proposals (Postdoc fellowships), provided it is not at the expense of performing quality science and research for the PI's current program. These issues, according to Basil, are still unclear and need to be discussed by Division managers.

It seems a Programmatic Strategic Hire, "where the successful candidate would be expected to initially work on an enduring, well established program", is going to be the main internal hiring practice for B Division staff. We are happy to see that scientific and technical excellence is considered as one of the most important criteria for TSM hires. Adhering to the guideline, "Biosciences postdocs will concentrate on performing quality science and technology, and broaden their scientific and technical education and training" will be beneficial for postdocs on both LANL internal and external career paths.

Many other issues were brought up by postdoc attendees. Some postdocs expressed their disappointment and frustration about changing projects too often to perform quality science and research. Some postdocs have spent time & effort on program development at the expense of performing quality science; they wish this effort to be counted, even though the new hiring practice will not consider this as an avenue in granting a TSM position. About the evaluation of scientific and technical excellence by publication in peer-reviewed journals, quality rather than number need to be considered. Some postdocs mentioned that the time taken for one publication is also research project dependent, which the science leadership team needs to keep in mind while making postdoc performance judgments.

More activities targeted at the B Division postdoctoral community have already started or will start soon. The Division will continue a regular Postdoctoral seminar/discussion forum that will give postdocs the opportunity to practice their presentations,

communication skills and to be able to demonstrate their achievements in science and research. Min Park volunteered to organize this formal/informal forum. He is also open to any suggestions. Kirk Rector has already initiated a monthly seminar series with the focus on how to help postdocs improve their career development. Please see Cathy's report for more detailed information. Finally, we are looking forward to Min's wonderful Korean BBQ.

➤ [Xiaomei Yan, Cathy Cleland, and Jian Song](#)



B Division Postdoctoral Seminar/Discussion Forum

B Division postdocs met with Min Park on 2/17/00 to discuss how the Postdoctoral Seminar/Discussion forum should be organized and to introduce the main contacts. Min has volunteered to be the Seminar/Discussion forum contact (park_min_s@lanl.gov, B-N2, ph: 667-5701). Kirk Rector, a postdoc in B-S2, is the coordinator for the B Division informal postdoctoral forum held once a month (kdr@lanl.gov, B-S2, ph: 667-7210).

As a general consensus, the B Division postdocs want the Postdoctoral Seminar/Discussion forum to be used for career development, scientific sharing and discovery, networking, and mentoring. We thought using the forum for interview skills would be beneficial to all (giving presentations and research proposals to small and large forums: small forums to get at the heart of the presentation/proposal and large forums for general practice). Inviting LANL alumni to share their interviewing experiences outside of LANL was favored by all. The Postdoctoral Seminar/Discussion forum could also be used to present short informative research talks, similar to those requested at large meetings. All of B Division will be invited. We were thinking of having the forum every other week but the details will be formalized soon.

We would like to coordinate the activities of the Postdoctoral Seminar/Discussion forum with Kirk's efforts. Kirk is the coordinator for B division Postdoc forum that meets once a month. The focus of this forum is to present research findings, practice presentations, initiate interactions among postdocs, promote scientific sharing, etc. (Kirk is open for suggestions). Post docs are encouraged to invite their mentors and to practice seminars in front of this friendly yet constructively critical forum. Irving Bigio spoke at our first meeting about presentation skills and resume tips. To get on the

mailing list for these meetings, contact Kirk (kdr@lanl.gov). Postdocs and their mentors are invited.

It was noted that John Browne has set aside funds for postdocs in B division for travel that amounts to \$500/post doc per year (not much but it is a start).

On a lighter note, once a month or so "when the weather gets nice", the postdocs will be invited to the homes of "important people" (Jim B., Basil S., and Min P., to name ONLY a few) for an informal party and chatting about research in a less formal environment. Min promises good eats (Korean BBQ) and good conversation!

➤ [Cathy Cleland](#)

Dear Editor,

I was wondering what happened with this (copied below)? I looked in the last 2 BScenes and couldn't find it, although a while back I saw an email that referred to our resource groups by one of the names I have replied to the email below with. Has a winner been announced and I missed it?

"On Fri, 21 Jan 2000, you wrote:

We are more than a month into the new B Division Structure and it is time to name our resources. Since we are not calling our 4 resources groups we need to refer to ourselves in some articulate way. For example some folks have been referring to the 4 resources as pods. Cells has been another thought.

Send your idea to ava@lanl.gov no later than noon

January 31, 2000. The core team will be meeting February 1st and will decide the winning entry. The winner will be announced in the next B Scene newsletter. The winner will receive a gift certificate for lunch for two at a Los Alamos restaurant of their choice."

➤ [Rob Leach](#)

Editor: How about it, Division management?

No Kidding 2

I have read with interest the debate on whether or not we should be allowed to bring our children to work. As a technician and a parent, I would like to comment on this issue.

I think that part of the reason feelings are so strong about this is that by allowing children to be brought into the lobby, the library, the coffee room, and office areas, the division is essentially discriminating against those that do not have access to office areas. If the common areas are cluttered with other people's children, there is no good place to go for a break. This becomes important if you are one of those who cannot eat or drink in the workplace. If you allow people to bring their children to their offices, and, believe me, I sympathize, it is not fair to those who do not have office areas.

The group of people without office space is, in general, the technicians. As I am a technician, I can speak from personal experience that it is very frustrating to have to scramble to take care of a sick child,

accommodate school schedules, and pay for after school care, and then see staff members with their children in their offices. Sorry, but staff members can more easily afford child care on their salaries than the technicians. I don't think anyone would argue for children in the lab areas. Since not everybody can have access for their children, nobody should have access for their children.

➤ [Linda Meincke](#)

Editor: Linda, thank you for such an honest letter. There are obviously two sides to this issue.



B There

The B Division staff seminar series is on Mondays at 11 AM in the HRL auditorium.

February 28, CANCELLED for JGI meeting

March 7, Min Park, B-N2, "Proteins 'R Us"

March 8, Donna Gadbois, B-N2 "Functional Genomics as a Resource" (reschedule from Feb 28).

March 13, Brian Dyer, B-S2, "Dynamics of the Primary Processes of Protein Folding"

March 20, Judy Mourant, B-S1, "Problems Working with Jim Freyer"

Help us plan the **10th Annual AIDS Walk** in Santa Fe - or - Sell ads in the program - or - Help form the walk teams - or - Spread the word - or - Help with the Wellness Pavilion tents - or - Volunteer for the day of the Walk (May 6) - and - CALL Santa Fe Cares at 989-9255! Kristina Moreno

Sensor Workshop in Santa Fe, Feb. 28-29, 2000.

Interested participants can get more information or register on-line through the web-site:

http://www.lanl.gov/programs/bioscience/Sensor_ws/meeting_contacts.htm.

Bioscience Division's Distinguished Speaker Series begins March 15th with Dr. Bernard Roizman, University of Chicago, world-renowned virologist whose work on herpes viruses has much relevance for gene expression and gene regulation. Gerry Myers, BN-1, is the technical host. The lecture will take place in P-Division Auditorium, March 15, beginning with a reception at 3 p.m.

LANL Director's Colloquium, March 28, 2000, Dr. Gabriele Kraatz-Wadsack, United Nations Special Commission, will speak on the "UN Role in Disarmament and Long-term Monitoring of Biological Warfare in Iraq." Jill Trehwella, B Division Director, will be the technical host.

LANL Director's Colloquium on April 11, 2000 will feature Dr. Mihail (Mike) Roco, NSF and Chair of the President's National Science and Technology Interagency Working Group on Nanoscience, Engineering and Technology. His talk entitled "The National Nanotechnology Initiative" will be given in the Physics Auditorium beginning at 01:10 PM. Technical host is Terry Lowe, MST Deputy Division Director.

Mark your Calender It's a Leap Century!



Leap Year was designed as a way of keeping our man-made calendar in sync with the astronomical year by adding an extra day every fourth year. The earth requires about 365.242 days, or to a first approximation, 365.25 days. So, to account for the odd quarter day, an extra calendar day is added every 4 years, having a 29th day of February instead of the standard 28. However, over many centuries, the difference between the approximate value of 0.25 day and the more accurate 0.242 day accumulates significantly. Thus, century years are treated differently. In the Gregorian calendar now in general use, the discrepancy is adjusted by adding the extra day to only those century years exactly divisible by 400 (e.g., 400, 1200, 1600, 2000). So, the next leap year on a century turnover will not occur until 2400! (Excerpted from *Encyclopedia Britannica*)

➤ [Contributed by Sandra Zink](#)

B Scenes

Mark Mundt Scores

"The sport of bowling is a physical scientist's delight. Issues of surface friction, energy conservation, weight imbalances, lane oil conditions, and the gyroscopic motion of the bowling ball all affect the roll of the ball down the lane. Combine that with the mechanical and mental requirements on the individual to provide the maximum action for the bowling ball with a consistent level of accuracy, within a margin of error, that is humanly possible to maintain, and one can discover quite a cerebrally challenging activity." So says Mark Mundt, who by day is a member of the JGI Bioinformatics Team, but away from work he is a member of a different sort of team.

Bowling is the number one sport in America (*I heard this on the radio recently, so it must be true*). Albuquerque is hosting at the Convention Center the annual American Bowling Congress, a gender nonspecific organization, National Championship Tournament for the year 2000. It is projected that over 50,000 people will participate over the four month duration, a record for a temporary site. Beginning in 1995, the event has been scheduled to be held once every three years at the permanently established National Bowling Center in Reno, a popular location. Mark Mundt has competed already this year in his 10th tournament, the first being in 1983 at Niagara Falls, NY. Each member bowls nine games divided into blocks of three for team, doubles, and singles competitions. Mark led his five-member team session with scores of 215, 211, and 213 to contribute to an overall total of 2683. This value places the team sponsored by Merrick of Los Alamos in third place so far in the Classified Division for teams with a combined average of 900 or less, a fact posted several times by the ABQ Journal recently. Note the score of 2683 falls below the 2700 average limit for a group, an indication of the difficulty of the lane conditions presented at the national tournament. Other teams from Los Alamos will compete later in the event. Mark bowls in leagues weekly in Santa Fe. He says that one of his favorite past-times is to train new B-Division bowlers in the swing and steps of the science of bowling and that Norman Doggett has proven to be an exemplary student, occasionally challenging Mark for high game.



- Contributed by Babs Marrone
- Photos by Annette Archuleta

B Serious



From *American Scientist* March-April 2000

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